REMARKS

Claims 16, 17, 19, 24-26, 28, 30-33, 37, 38, 41-43, 45 and 50 were considered in the Office action.

Applicants reiterate the position that the Examiner should consider claims 20-23, 27, 29, 34-36, 40, 44, 46-49 and 51-58 in this application, unless the Examiner is agreeing that the species in these claims are novel and non-obvious in view of claims 16, 17, 19, 24-26, 28, 30-33, 37, 38, 41-43, 45 and 50. See MPEP § 806.04. Applicants noted the citation to MPEP § 803.02, but have also noted that that section refers to election of species within Markush claims and not election of species within groups of claims. Thus, Applicants have not cancelled claims 20-23, 27, 29, 34-36, 40, 44, 46-49 and 51-58 and requests that the Examiner consider them.

Applicants have amended the specification to correct an obvious typographical error on page 11; no new matter has been added.

Response To 112 Rejection

Claims 16 and 42 stand rejected under 35 U.S.C. § 112 as allegedly being indefinite. Applicants submit that the phrases "using the polymerization performance as a figure of merit for planning ..." and "using the determination as a figure of merit for planning..." are not confusing. Applicants respectfully submit that those of skill in the art readily understand these phrases to mean that the results of the polymerization reactions (figures of merit), whether they be polymerization performance of the catalyst or a property of the polymer sample, have to overcome a certain threshold before additional experimentation will be planned for the sample (catalyst).

As explained in the accompanying Declarations Under 37 C.F.R. 1.132 by Dr. Murphy and Dr. Jordan, the figure of merit is the particular property being measured for threshold performance of the catalyst. The threshold of performance is determined by the experiment designer and is typically set sufficiently high so that many catalysts do not meet that performance (effectively thus screening the catalysts, i.e., throwing some out and proceeding with others). Also, in the invention being claimed in this application, the performance threshold is set high enough that a prediction can be made about the catalyst when the performance of the catalyst exceeds the threshold.

Additionally, Applicants submit that the term "figure of merit" is not a relative term as defined in MPEP 2173.05(b). A figure of merit is simply a numerical quantity used for indicating comparative effectiveness. Thus, the figure of merit has a non-relative meaning, such as a polymerization property. The attached Declarations state that one of ordinary skill in the art does in fact understand what is being claimed.

With the evidence now in the record, Applicants request that these rejections be reconsidered and withdrawn.

Response To Obviousness Rejection

Claims 16, 17, 19, 24-26, 28, 30-33, 37, 38, 41-43, 45 and 50 remain rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Van Tol et al. (WO 97/42232) in view of Willson (WO 97/32208). Applicants traverse the rejections on the ground that a prima facie case of obviousness has not been established because not all of the claim limitations are taught or suggested. Claims 16,17, 19, 24-26, 28, 30-33, 37, 38, 41-43, 45 and 50 are not obvious in light of Van Tol and Willson.

Independent claims 16 and 42, and thus all the claims, require that a prediction for the performance of a specified catalyst with regards to a second monomer be made as a result of the reaction of the same catalyst with a first monomer in order to perform the claimed method. The claims require that the polymerization reaction results of the catalyst with the first monomer be used as a figure of merit for the planning of additional screens or laboratory or commercial polymerizations or copolymerizations. Thus, the prediction operates as part of the "screening of potential catalysts."

The Examiner has relied upon Van Tol as teaching the claim element of using the polymerization performance as a predictor for the performance of the catalyst from a first monomer to a second monomer. Applicants respectfully disagree with the assertion that Van Tol makes any sort of prediction by using octene in one example and using other monomers in other examples with different catalysts. Van Tol does not disclose any figure of merit, prediction, or screening of catalysts. Van Tol performs no further polymerizations with other monomers using the same catalysts based on the initial polymerization results.

As discussed in detail in the accompanying Declarations of Dr. Jordan and Dr. Murphy, the figure of merit acts as a predictor for the performance of the catalysts with a second

monomer. Thus, as a screening tool, the catalysts (via the figures of merit) are compared to each other and/or other known standards to determine which catalysts will be further experimented upon. Typically, the catalyst must over come a benchmark of performance, which is typically set sufficiently high so that many catalysts do not meet that performance (effectively thus screening the catalysts for performance and not just simple utility). Also, the comparative numerical property is set high enough that a prediction can be made about the catalyst when the performance of the catalyst (figure of merit) exceeds the benchmark.

Van Tol simply does not do this. The Van Tol reference describes three different catalysts used to polymerize three different monomers or monomer combinations. There is no consideration of how one catalyst will perform with another monomer, and there is no consistent use of a single catalyst with different monomers. Van Tol simply uses different catalysts with different monomers.

Van Tol also does not teach using a prediction for further planning of experiments, etc. Since all of the catalysts in Van Tol's example are different, there can be no prediction from one experiment to the next, and Val Tol does not suggest predictions of performance of those catalysts that were reacted, with other monomers.

Val Tol also does not predict polymerization performance for a catalyst with one monomer (or a combination of monomers) using the polymerization performance of that catalyst with another monomer. Val Tol also does not disclose or suggest screening catalysts based on a prediction of polymerization performance.

In short, Van Tol fails to disclose numerous elements of the claimed invention.

Applicants are uncertain exactly what the Examiner means in Paragraph 11 of the Final Office action. The Examiner concludes that Van Tol reads on the predictor limitation because "[t]here are ***no*** specific values or algorithms that are to be used in making [the] prediction." However, Van Tol does not disclose the prediction step and there does not need to be any specific value or algorithm to make this claim patentable over the art of record. Essentially, the predictor step is carried out by setting a benchmark for the figure of merit high enough so that the prediction can be made, as explained in the accompanying Declarations. The claim limitation is there. The claim recites "using as a predictor." Van Tol does not disclose any sort of prediction or screening design. Therefore, the limitation in the claims of determining the polymerization performance of the potential catalysts for at least a first monomer as a predictor

for the polymerization performance of the potential catalysts for at least a second monomer does not require any additional limitations in order to be patentable over the art of record. This limitation, read with the claim as a whole is patentable over Van Tol.

Applicants further submit that Willson does not cure Van Tol's deficiencies. Willson does not teach or suggest using the polymerization performance of a catalyst with one monomer to predict the polymerization performance of the same catalyst with another monomer (or other monomers).

For at least these reasons, all of the pending claims are patentable over Van Tol in view of Willson. Applicants' interpretation of its claims and Van Tol and Willson is supported by evidence submitted herewith by those of skill in the art, including Dr. Richard Jordan and Dr. Murphy.

Paragraph 13 of the Final Office action alleged that limitations set forth in the preamble of the independent claims are not accorded any patentable weight. First, regardless of the preamble, as explained below, Van Tol does not disclose or teach "using the polymerization performance as a figure of merit for planning of additional screens, laboratory or commercial polymerization or copolymerization" as claimed. Second, the preamble phrase, "wherein the polymerization performance of the potential catalysts is determined for at least a first monomer as a predictor for the polymerization performance of the potential catalysts for at least a second monomer, the first and second monomers being different from each other and the first monomer being an olefin other than ethylene" of claim 16, is more than a mere statement of purpose, and the language is essential to particularly point out the invention defined by the claims. Since the phrase is essential to point out the invention, it constitutes a limitation on the claims. See Kropa v. Robie, 187 F.2d 150 (CCPA 1951).

Paragraph 14 of the Final Office action states that the limitations appear to be directed at the intended use of the claimed method. The claimed limitations are not merely an intended use. The limitations are process steps for screening catalysts. As explained below, the process steps claimed are not the same as those disclosed in Van Tol. The invention is not an intended use of Van Tol's process for single polymerization. Van Tol does not disclose the step of "using the polymerization performance [of the catalyst with a first monomer] as a figure of merit for planning of additional screens, laboratory or commercial polymerization or copolymerization [with a second monomer]." The preamble limitations state that the additional screen, laboratory

or commercial polymerization or copolymerization utilizes the same catalyst and a second monomer based on the results of the results of the first monomer and the catalyst. This is not disclosed or taught by Van Tol. Also, there is a tremendous manipulative difference between the invention as claimed and Van Tol. The difference is that in the present invention the polymerization performance of the potential catalysts is determined for at least a first monomer as a predictor for the polymerization performance of the potential catalysts for at least a second monomer. This is a feature that is not present in any of the art of record, specifically, Van Tol.

Paragraph 15 of the Final Office action states that "predicting" and "planning" are mental acts that have no patentable weight. Applicants submit that the predicting and planning steps are indirectly reciting an algorithm. To have patentable weight, an algorithm, or mental step must be applied to physical elements or processes. If so, the step has patentable weight. In the present claims, the figure of merit (a definite number) is used to predict (by comparison to a benchmark or threshold) how the potential catalyst will generally perform with a second monomer based on its reaction with a first monomer (i.e., predict). The prediction results in planning further experiments involving the same catalyst and at least a second monomer. The step results in further polymerizations in which the group of potential catalysts is narrowed. Some catalysts are eliminated from consideration (i.e., screened) and others are polymerized with a second monomer in order to ultimately discover a catalyst or catalyst family for polymerization of the second monomer. There is a material change, in that the further polymerizations will not include some of the catalysts that were initially used. They will have been screened out, which is the whole premise of the claim. For example, the planning step of the claim is in fact a step that could be carried out by a computer if a threshold value is predetermined. The machine can calculate and evaluate the figure of merit, compare it to the threshold value, and schedule further polymerizations with at least a second monomer based on the figure of merit for each potential catalyst. The results of this are more than mere numbers. The results are further polymerizations involving a catalyst or catalysts from the original polymerizations and a second monomer. Therefore, the planning and predicting step do have patentable weight and need to be considered.

Furthermore, Applicants traverse the existence of any motivation for combining Van Tol and Willson. The motivation for combination in the Office action is based on the desire to "discover the optimum or workable ranges by routine experimentation" citing to *In re Aller*. However, the present invention is not directed simply toward discovery of the optimum or

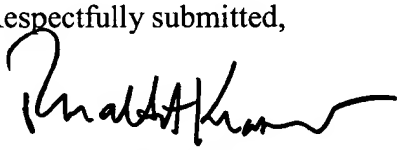
workable ranges for otherwise known catalysts. Although Applicants agree that Willson is directed toward testing catalysts in parallel, Willson does not disclose criteria for selecting among polymerization catalysts based on a prediction of polymerization performance, and further testing based on that prediction used as a figure of merit. Van Tol is directed toward certain polymerization catalysts. The only motivation for combination that is apparent to Applicants is that both references refer to polymerization, which is insufficient.

Finally, Applicants submit that secondary considerations must also be considered by the Patent Office. Specifically, Applicants submit that evidence of commercial success contributes significantly to the nonobviousness of the invention. The accompanying Declaration by Dr. Vince Murphy discusses the commercial success of the invention and includes press releases supporting those statements.

Therefore, Applicants assert that a prima facie case of obviousness does not exist for the pending claims in view of the references relied upon in the Office action.

Applicants request reconsideration of this application.

Respectfully submitted,



Date: 4-30-03

Ronald A. Krasnow
Reg. No. 33,321
Attorney for Applicant(s)

Symyx Technologies, Inc.
3100 Central Expressway
Santa Clara, California 95051
Tel.: (408) 773-4024
Fax: (408) 773-4029

APPENDIX SHOWING AMENDMENTS

IN THE SPECIFICATION

Please amend the paragraph on page 11, starting at line 9 as follows:

In preferred embodiments, the first monomer is 1-octene, and the second (or third) monomer is selected from the group consisting of the lower olefins (ethylene, propene, 1-butene, 1-pentene, 1-hexene, and 1-heptene), as well as compounds that polymerize in a similar fashion.[, please change "lower octenes."]